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'Watergy': Saving Energy While Supplying Water

Improved energy efficiency and energy management in Sri Lanka's Water Supply and Drainage Board, results in savings and increased access to water...

"We had water problems in the Koneswaran temple premises for several years, but since the NWS&DB arranged for the supply of water to the Koneswaran Temple, we now have continuous water service."

M.K. Sellarajah, President, of the Thiru Koneswaran Temple, in Kantale - a major water consumer in the region

Sri Lanka's national water utility, the National Water Supply and Drainage Board (NWS&DB) has restored water services to customers that had not had regular water access for several years. With the support of Alliance to Save Energy (ASE) and the USAID/US-AEP program, the NWS&DB took steps to improve energy efficiency in their water supply service in Kantale, Trincomalee District in the North Eastern region of Sri Lanka. These have led to energy savings of 45 percent and increased water services in some areas of Trincomalee from one hour a day to uninterrupted access.

ASE and USAID/US-AEP began working with NWS&DB in late 2001. The program used an innovative approach coined as "watergy," based on increasing water services by improving energy efficiency and management. In collaboration with the Sri Lanka Energy Managers Association, ASE conducted an energy audit of the main water pumping station supplying water to about two million residents in greater Colombo. Through this audit several ways to increase energy efficiency were identified and put into practice. Bolstered by the value and innovation of the "watergy" approach, the NWS&DB was now geared to take on new efficiency projects in other parts of the country.

The Kantale water system was built in 1984 and has a daily capacity of 36,000 cubic meters providing water to over 480,000 residents of Trincomalee. Expansion of the system in the 1980s and 1990s led to less than optimal operating conditions, increased electricity consumption, and reduced water supplies for local residents.

Understanding the opportunities for improving the system's pumping operations, including pump replacements and installation of variable speed drives, engineers were able to install decommissioned pumps from other systems and pumps that more closely matched system head and maximal operating requirements. Since these upgrades were put in place in early 2003, NWS&DB has reported monthly savings of more than Rs. 1.5 million ($15,000), at a total project cost of Rs. 1.2 million ($12,000), covering the investment in less than a month.

Based on the demonstrated results, NWS&DB is eager to build in energy and water efficiency into the utility's operations that span the whole country. Many opportunities to factor in energy efficiency into new projects exist thanks to the flow of donor funding supporting the post-tsunami rebuilding process. By considering energy efficiency practices and technologies in project design and implementation, the NWS&DB can significantly improve access to safe drinking water to reach more Sri Lankans, at a lower cost to the government and consumers.